

Absolute Value

Solve each equation.

25. $|x + 4| = 8$

26. $|x - 5| = 12$

27. $|2 + x| = 10$

28. $|8 - x| = 1$

29. $|x - 2| = 9$

30. $|x + 5| = 11$

31. $|2x - 15| = 11$

32. $|3x + 12| = 18$

33. $|10 - 4x| = 28$

34. $|5 + 4x| = 17$

35. $|5x - 6| = 2$

36. $|10 - 3x| + 5 = 2$

37. $|10x + 2| - 18 = -12$

38. $|4 - 3x| - 9 = 3$

39. $|2x - 8| + 2 = 1$

Solve each inequality. Graph the solution on a number line. If the equation has no solution, write *no solution*.

40. $|x - 4| > 1$

41. $|x + 5| \leq 7$

42. $|3x| > 15$

43. $|-2x| \leq 12$

44. $|4x| \leq -8$

45. $|3 - x| \geq -5$

46. $|2 + 5x| \leq 3$

47. $|2x - 3| < 11$

48. $|4x + 6| \leq 14$

49. $\left| \frac{2x+3}{-5} \right| < 3$

50. $|4x - 5| \geq 15$

51. $|2x - 1| \geq -5$

52. $|5x + 3| > -2$

53. $|7 - 6x| < -4$

54. $|9x + 4| \leq -11$

55. $-2|4x + 1| \leq -4$

56. $-2|4x + 1| \geq -4$

57. $\left| \frac{3}{2} - \frac{5}{2}x \right| < -\frac{7}{2}$

For Exercises 62–65, write and solve an absolute-value inequality.

62. **HEALTH** Antonio weighs 120 pounds, and his doctor said that his weight differs from his ideal body weight by less than 5 percent. What are the possible values, to the nearest pound, for Antonio's ideal body weight?

63. **ENTERTAINMENT** A tightrope walker is 10 feet from one end of the rope. If he then takes 3 steps and each step is 11 inches long, how far is he now from the same end of the rope? Give both possible answers.

